NAME OF OFFEROR OR CONTRACTOR

ITEM NO.	SECTION B SUPPLIES/SERVICES	QTY	UNIT	UNIT PRICE	AMOUNT
	PR 08-14-1434 FSC 6635 PROCURE A PROPELLER BALANCER IN ACCORDANCE WITH (IAW) PURCHASE DESCRIPTION DSCR-FAPBB 08-14-1434 DATED MAY 6, 2008.				
0001	MACHINE DESIGN IAW PARA 3.21.1 **(DUE 90 DAYS AFTER RECEIPT OF AWARD OF THE CONTRACT)**	1	LOT	$_____	$_____
0002	VERTICAL AXIS PROPELLER BALANCING MACHINE.	1	EA	$_____	$_____
	MANUFACTURED BY: _____ MODEL NUMBER: _____ COUNTRY OF ORIGIN: _____				
0003	PROPELLER POSITIONING HARDWARE	1	EA	$_____	$_____
0004	COMPUTERIZED CALCULATION OF WEIGHT	1	EA	$_____	$_____
0005	COMPUTERIZED BALANCING REPORT CAPABILITY.	1	EA	$_____	$_____
0006	DEVELOPMENT OF CALCULATION PROCEDURE	1	LOT	$_____	$_____
0007	OPERATING PROCEDURES, AND OPERATING TRAINING AND MAINTENACE MANUALS IAW PARA 3.26 AND 3.26.1.	1	LOT	$_____	$_____
0008	ADAPTER RINGS	10	EA	$_____	$_____
0009	DELIVERY	1	LOT	$_____	$_____
0010	TURNKEY INSTALLATION TO INCLUDE DESIGN AND CONSTRUCTION OF MACHINE SITE PREP WORK FOR FOUNDATION PADS AND INSTALLATION OF FOUNDATION.	1	LOT	$_____	$_____
0011	FOUNDATION	1	LOT	$_____	$_____
	DELIVER TO:				
0012	TRAINING IAW 3.26 AND 3.26.1	1	LOT	$_____	$_____
	RECEIVING OFFICER NORFOLK NAVAL SHIPYARD BUILDING #: 276 PORTSMOUTH, VA 23709-5000				
	MARK FOR: ATTN: JENNIFER CLARK (757) 396-8164				
	TOTAL PRICED				$_____

ITEM NO.	SECTION B SUPPLIES/SERVICES	QTY	UNIT	UNIT PRICE	AMOUNT

THE FOLLOWING SHALL APPLY:

1. PRE-PROPSAL SITE VISIT - A pre-proposal site visit will be held at Norfolk Naval Shipyard. At this time, the Government will explain or clarify its requirements, respond to questions regarding the solicitation and permit a general inspection of the proposed installation site. Interested firms are encouraged and expected to attend the site visit to familiarize them with the installation site as will as all general and local codes and conditions which may affect the cost of contract performance, to the extent such information is readily obtainable.

In no event will failure to attend the site visit constitute grounds for withdrawal of an offer after opening or for a claim after award of the contract. Incomplete proposals received due to an offeror's failure to attend shall not be considered. No other visits to the site shall be permitted. Unless amended in writing, remarks and explanations at the site visit will not qualify the terms of the solicitation or specifications. To facilitate temporary security clearance, interested parties shall contact the Contracting Officer seven days in advance of the planned date to advise the:

Company name,
Name of representative(s),
Representative(s) social security number,
Representative(s) date of birth,
Representative(s) place of birth,
Representative(s) address
Security clearance and basis
Purpose of Visit
Date of Visit
Point of Contact for Visit

The information will be forwarded to the receiving activity on official company letterhead signed by a company representative along with a completed I-9 form for each representative for use in determining security clearances. All representatives shall be American (English speaking) citizens of good standing. All arrangements for site visit attendance shall be made through the Contracting Officer of his designee.

This site visit will be conducted at:

Location: Shop 11 Building 163, Norfolk Naval Shipyard
Date: (TO BE DETERMINED)
Time: (TO BE DETERMINED)

In the event of problems of delays on the day/date of the site visit, interested parties shall notify the Contracting Officer to advice of the delay.

CONTINUATION SHEET	REFERENCE NUMBER OF DOCUMENT SPM4A8-08-R-0109	PAGE 4 OF

NAME OF OFFEROR OR CONTRACTOR

ITEM NO.	SECTION B SUPPLIES/SERVICES	QTY	UNIT	UNIT PRICE	AMOUNT

2. PERFORMANCE BASED PAYMENTS SHALL APPLY IN ACCORDANCE WITH (IAW) FAR 52.232.32.

CONTRACTOR WILL ONLY RECEIVE SEVENTY PERCENT OF THE TOTAL AMOUNT OF ITEMS 0001

AND 0002 ONLY.

3. CLAUSE I46F35, FAR 52.246-9G28 WARRANTY OF SUPPLIES OF A DSCR COMPLEX NATURE - IPE (MAY 2001) SHALL APPLY. (SEE ATTACHED)

Warranty terms shall be in accordance with warranty clause I46F35 52.246-9G28 Offeror shall sign below that he/she is in agreement with the Government Terms and Conditions.

_____

Signature of Offeror

4. PERIOD OF PERFORMANCE: THE PERIOD OF PERFORMANCE FOR THIS CONTRACT IS 180 CALENDAR DAYS AFTER RECEIPT OF CONTRACT. ALL REQUIREMENTS OF THE CONTRACT SHALL BE COMPLETED WITHIN 180 CALENDAR DAYS AFTER RECEIPT OF AWARD.

5. FOB: - DESTINATION INSPECTION - ORIGIN FINAL ACCEPTANCE - DESTINATION

6. QUALITY ASSURANCE PROVISION (QAP) 175 SHALL APPLY.

7. CLAUSE 52.247-27, CONTRACT NOT AFFECTED BY ORAL AGREEMENT: NO ORAL STATEMENT OF ANY PERSON SHALL MODIFY OR OTHERWISE AFFECT THE TERMS, CONDITIONS, OR SPECIFICATIONS STATED IN THE CONTRACT. ALL MODIFICATIONS TO THE CONTRACT SHALL BE MADE IN WRITING BY THE CONTRACTING OFFICER OR AN AUTHORIZED REPRESENTATIVE.

8. CHARGE FOR RE-INSPECTION: THERE WILL BE AT LEAST A MINIMUM CHARGE OF $2,500.00 FOR EACH RE-INSPECTION THAT HAS TO BE PERFORMED BY THE GOVERNMENT DUE TO MACHINE NOT READY FOR INSPECTION.

9. NOTICE TO ALL CONTRACTORS: AFTER CONTRACT AWARD, ALL QUESTIONS OR ISSUES SHALL BE ADDRESSED WITH ELIZA MILLER (804) 279-6423. THE CONTRACTING OFFICER IS THE "ONLY" INDIVIDUAL AUTHORIZED TO MAKE ANY CHANGES.

I46F35 52.246-9G28 WARRANTY OF SUPPLIES OF A DSCR (MAY 2001)
COMPLEX NATURE - IPE

(a) Definitions: "Acceptance," as used in this clause, means the act of an authorized representative of the Government by which the Government assumes for itself, or as an agent of another, ownership of existing and identified supplies, or approves specific services rendered, as partial or complete performance of the contract. "Supplies," as used in this clause, means the end items furnished by the Contractor and related services required under this contract. The word does not include "Data."

(b) Contractor's obligations.

(1) The Contractor warrants that for one (1) year all supplies furnished under this contract will be free from defects in material and workmanship and will conform with all requirements of this contract. Warranty period begins from the date of acceptance.

(2) Any supplies or parts thereof corrected or furnished in replacement by the Contractor shall be subject to the conditions of this clause to the same extent as supplies initially delivered. This warranty shall be equal in duration to that set forth in paragraph (b)(1) of this clause and shall run from the date of delivery of the corrected or replaced supplies.

(3) When the machine is inoperable because of a defect, deficiency and/or nonconformance subject to the Contractor's warranty, and after the Contractor has received written notice of the defect, deficiency or nonconformance, the warranty shall be extended for the time period during which the machine was inoperable (i.e., length of time from when Contractor receives notification until machine is operable.)

(4) The Contractor shall not be obligated to correct or replace supplies if the facilities, tooling, drawings, or other equipment or supplies necessary to accomplish the correction or replacement have been made unavailable to the Contractor by action of the Government. In the event that correction or replacement has been directed, the Contractor shall promptly notify the Contracting Officer, in writing, of the nonavailability.

(5) The Contractor shall also prepare and furnish to the Government data and reports applicable to any correction required (including revision and updating of all affected data called for under this contract) at no increase in the contract price.

(6) When supplies are returned to the Contractor, the Contractor shall bear the transportation costs from the place of delivery specified in the contract (irrespective of the f.o.b. point or the point of acceptance) to the Contractor's plant and return. When defective items are returned to the Contractor from other than the place of delivery specified in the contract, or when the Government exercises alternate remedies, the Contractor's liability for transportation charges incurred shall not exceed an amount equal to the cost of transportation by the usual commercial method of shipment between the place of delivery specified in the contract and the Contractor's plant and subsequent return.

(7) All implied warranties of merchantability and "fitness for a particular purpose" are excluded from any obligation contained in this contract.

(c) Remedies Available to the Government.

(1) In the event of a breach of the Contractor's warranty in paragraph (b)(1) and (b)(2) of this clause, the Government may, at no increase in contract price-

(i) Require the Contractor, at the place of delivery specified in the contract (irrespective of the f.o.b. point or point of acceptance) or at the Contractor's plant, to repair or replace, at the Contractor's election, defective or nonconforming supplies, or

(ii) Require the Contractor to furnish at the Contractor's plant the materials or parts and installation instructions required to successfully accomplish the correction.

(iii) Where it is impracticable for the Government to pursue remedies at (i) and (ii), the Government may arrange for the repair or replacement of defective or nonconforming supplies by the Government or by another source at the Contractor's expense. Where the Government is to accomplish the repair, the Contractor at the Government's option will furnish the material or parts and the instruction required to successfully accomplish the repair.

(2) If the Contracting Officer does not require correction or replacement of defective or nonconforming supplies or the Contractor is not obligated to correct or replace under paragraph (b)(4) of this clause, the Government shall be entitled to an equitable reduction in the contract price.

(3) The Contracting Officer shall notify the Contractor in writing of any breach of the warranty in paragraph (b) of this clause

within a reasonable period, but not later than 45 days after discovery of the defect. The Contractor shall submit to the Contracting Officer a written recommendation within 2 working days as to the corrective action required to remedy the breach. After the notice of breach, but not later than 5 days after receipt of the Contractor's recommendation for corrective action, the Contracting Officer may, in writing, direct correction or replacements in paragraph (c)(1) of this clause, and the Contractor shall, notwithstanding any disagreement regarding the existence of a breach of warranty, comply with this direction within 5 days of receipt. If it is later determined that the Contractor did not breach the warranty in paragraph (b)(1) and (b)(2) of this clause, the contract price will be equitably adjusted.

(4) If supplies are corrected or replaced, the period for notification of a breach of the Contractor's warranty in paragraph (c)(3) of this clause shall be 45 days from the discovery of the defect.

(5) The rights and remedies of the Government provided in this clause are in addition to and do not limit any rights afforded to the Government by any other clause of the contract.

(6) The Contractor shall be liable for the reasonable costs of disassembly and/or reassembly of larger items when it is necessary to remove the supplies to be inspected and/or returned for correction or replacement.

NOTE: FAR CLAUSE 52.246-18 IS APPLICABLE ONLY IF ITEM(S) ARE PLACED IN USE WITHIN THE LAND AREA OF THE UNITED STATES CONTIGUOUS TO THE 48 STATES.

PURCHASE DESCRIPTION FOR THE PROCUREMENT OF A VERTICAL AXIS PROPELLER BALANCING MACHINE

1.0 SCOPE

1.1 Scope. This purchase description specifies the minimum requirements for the procurement, installation, and training for a vertical axis propeller balancing machine. This includes design and construction of machine, site prep work for the foundation pads and installation of foundation pads as specified herein. This is to be a turn-key project.

2.0 APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks.

STANDARDS

FEDERAL

FED-STD-H28A - Screw Thread Standards for Federal Services (1994 edition)

MILITARY

MIL-STD-167 - Mechanical Vibration of Shipboard Equipment (Type I Environmental and Type II Internally Excited (1999 edition)

MIL-STD 1907 - Inspection, Liquid Penetrate and Magnetic Particle, Soundness Requirements for Materials, Parts, and Weldments (2002 edition)

MIL-HDBK 831 - Test Report Preparation Of (2004 edition)

NAVY

NAVSEA - T9074-AS-GIB-010/271 - Requirements for Nondestructive Testing Methods (1999 edition)

(Application for copies should be addressed to the Standardization Document Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents and publications. The following other Government documents and publications form a part of this purchase description to the extent specified herein.

CODE OF FEDERAL REGULATIONS (CFR)

U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910 - Occupational Safety and Health Standards (2007 edition)
29 CFR 1910.1200 and 1915.99-Hazard Communications
29 CFR 1926-Safety and Health Regulations for Construction
40 CFR 261-Identification and Listing of Hazardous Waste
49 CFR 173.2-Hazardous Materials Classes and Index to Hazard Class Definitions

(Application for copies should be addressed to the U.S. Department of Labor, 200 Constitution Ave, Washington, D.C. 20210)

2.2 Non-government publications. The following documents form a part of this purchase description to the extent specified herein.

AMERICAN CONCRETE INSITUTE (ACI)

ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete (1991 edition)

ACI 301 - Specifications for Structural Concrete (2005 edition)

ACI 318 M - Building Code Requirements for Structural Concrete and Commentary (2005 edition)

ACI/MCP-4 -(2006) Manual of Concrete Practice Part 4-ACI 345R-05 to 355.2R-04

(Application for copies should be address to the American Concrete Institute, 38800 Country Club Drive, Farmington Hills, MI 48331)

ACOUSTICAL SOCIETY OF AMERICA (ASA)

ASA S12.23 - Method for the designation of Sound Power Emitted by Machinery and Equipment-ASA 83 (1989 edition)

(Application for copies should be address to the Acoustical Society of America, 35 Pinelawn Road, Suite 114 East, Melville, NY 11747)

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)

AGMA 2001-D04 - Fundamental Rating Factors and Calculation Methods for Involute Spur and Helical Gear Teeth (2004 edition)

AGMA 2011-A98 - Cylindrical Wormgearing Tolerance and Inspection Methods (1998 edition)

AGMA 2015-1-A01 - Accuracy Classification System - Tangential Measurements for Cylindrical Gears - replaces 2000-A88 (2001 edition)

AGMA ISO 1328-1- Cylindrical Gears-ISO System of Accuracy-Part 1: Definitions and Allowable Values of Deviations Relevant to Corresponding Flanks of Gear Teeths

(Application for copies should be addressed to the American Gear Manufacturers Association, 500 Montgomery Street, Suite 350, Alexandria, VA 22314-2560)

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 325 - Steel Construction Manual – 13 edition (2005 edition)

(Application for copies should be addressed to the American Institute of Steel Construction, 1 East Wacker Drive, Suite 3100, Chicago, IL 60601-2001)

AMERICAN NATIONAL STANDARDS INSTITUTE, INC (ANSI)

(Application for copies should be addressed to the American National Standards Institute, Inc. Dept 969, 1430 Broadway, New York, NY 100181)

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING INC (ASNT)

SNT-TC-1A - Recommended Practice No. SNT-TC-1A (2001 edition)

(Application for copies should be addressed to the American Society for Nondestructive Testing, 1711 Arlingate Lane, P.O. Box 28518, Columbus, OH 43228-0518)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME Y14.5M - Dimensioning and Tolerancing, R1999 (2004 edition)

(Application for copies should be addressed to the ASME International, Three Park Avenue, M/A 10 E, New York, NY 10016-5990)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM 172 Rev A - Standard Practice for Sampling Freshly Mixed Concrete (2007 edition)

ASTM C 31/31 M - Standard Practice for Making and Curing Concrete Test Test Specimens in the Field (2006 edition)

ASTM C 33 - Standard Specification for Concrete Aggregates (2007 edition)

ASTM C 39/39 M - Standard Practice Method for Compressive Strength of Cylinder Concrete Specimens (2005 edition)

ASTM C 42/C 42 M - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete-AASHTO No.: T24 (2004 edition)

ASTM C 143/C 143 M - Standard Test Method for Sump of Hydraulic Cement Concrete (2005 edition)

ASTM C 150 - Standard Specification for Portland Cement (2007 edition)

ASTM C 172 REV A - Standard Practice for Sampling Freshly Mixed Concrete (2007 edition)

ASTM C 192/C 192 M - Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory (2007 edition)

ASTM D 3951 - Standard Practice for Commercial Packaging (1998 edition)

ASTM E 1444 - Standard Practice for Magnetic Particle Testing (2005 edition)

(Application for copies should be addressed to the American Society for Testing and Materials, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959)

AMERICAN WELDING SOCIETY INC (AWS)

AWS B2.1 - Specification for Welding Procedure and Performance Qualification (2005 edition)

AWS D1.1/D1.1M - Structural Welding Code – 20th Edition - Steel (2006 edition)

(Applications for copies should be addressed to the American Welding Society Inc, 550 North LeJeune Road, Miami, FL 33126)

ELECTRONIC INDUSTRIES ASSOCIATION (EIA) STANDARDS

(Address application for copies to the Electronic Industries Association, Engineering Dept., 2500 Wilson Blvd., Arlington, VA 22201-3834)

NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA)

(Address application for copies to the Electronic Industries Association Engineering Dept., 2500 Wilson Blvd., Arlington, VA 22201-3834)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 - National Electrical Code - 2008 Edition

NFPA 79 - Electrical Standard for Industrial Machinery - 2007 Edition

(Application for copies should be addressed to the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101)

NATIONAL FLUID POWER ASSOCIATION (NFPA)

NFPA T2.24.1 R1 - Hydraulic Fluid Power - Systems Standards for Stationary Industrial Machinery Supplement to ISO 4413: 1998-Hydraulic Fluid Power-General Rules Relating to Systems to be Used in Conjunction with ISO 4413: 1998 (R1, 2000 edition)

NFPA T2.25.1 R2 - Pneumatic fluid power Systems standard for industrial machinery Supplement to ISO 4414: 1998 Pneumatic fluid power General rules relating to systems - Must be used in conjunction with ISO 4414: 1998 - Third Edition (2005 edition)

(Applications for copies should be addressed to the National Fluid Power Association, 3333 N Mayfair Road, Suite 311, Milwaukee, WI 53222-3219)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption is obtained.

3.0 REQUIREMENTS

3.1 General requirements. The equipment is not a current commercially available model ; the equipment shall be designed and built by the contractor. The equipment shall be complete, so that when connected to the Norfolk Naval Shipyard utilities identified herein, it can be used for any function for which it is designed and constructed.

3.1.1 New developments. If, during the contract period, any new developments are generated that would improve the efficiency, accuracy or productivity of the machine and its related equipment or decrease its operational costs, the contractor shall notify the Contracting Officer.

3.1.2 Safety And Health Requirements. The machine shall be fitted with safety devices or coverings for any parts that present safety hazards. All equipment furnished under this purchase

description must comply with applicable OSHA and NFPA standards. The machine shall include provisions to isolate and lock out all sources of hazardous energy, either input to the machine or generated by the machine, to ensure safety of operation and maintenance personnel. Electrical lockout devices shall conform to the requirements of NFPA 79. Lockout devices for electrical or any other type of hazardous energy (mechanical, hydraulic, pneumatic, chemical, thermal or other) shall be designed to allow full operational compliance with the requirements of OSHA Standard 29 CFR. All system and operation standards shall comply with OSHA standards on Human Factors Engineering (Ergonomics). All machine parts, components, mechanism, and assemblies furnished on the unit shall comply with all specific requirements of "OSHA Safety and Health Standards (29 CFR 1910) General Industry" that are applicable to the equipment itself.

3.1.2.1 Safety devices. Cover guards or other safety devices shall be provided for all parts of the equipment that present safety hazards. The safety devices shall not interfere with the operation of the equipment. The safety devices shall prevent unintentional contact with the guarded part, and shall be removable to facilitate inspection, maintenance, and repair of the parts.

3.1.2.2 Material Safety Data Sheets. Offeror's and contractors shall submit Material Safety Data Sheets (MSDS's) whenever the supplies being acquired or supplies used during performance are identified as hazardous materials. Hazardous Materials shall include any material which, by virtue of its potentially dangerous nature (e.g., toxic, flammable, corrosive, oxidizing, irritating, sensitizing, reactive), requires controls in its use, packaging, handling, storage, or stowage, to assure adequate safety to life and property. This definition is intended to apply to proprietary industrial, commercial, or locally prepared blends, mixtures, formulations, or compounds of gases, liquids, and solids intended for use at the job site. Any other material that has been designated by a Government technical representative as potentially hazardous and requiring safety controls shall also be supplied with a MSDS. MSDS's are to be available at work sites where materials are being used.

3.1.3 Audible noise level. Audible noise emitted by the equipment shall not exceed 84 decibels (dB), measured on the "A" weighted scale of a standard Type II sound level meter, at the operator's work position or any point at a distance of three (3) feet from the equipment. The equipment shall be in accordance with ASA S12.23.

3.1.4 Environmental protection. The equipment shall be designed and constructed, so that under the operating service, transportation and storage conditions described herein, the equipment shall not emit materials hazardous to the ecological system as prescribed by federal, state, and local statutes in effect at the time of bid.

3.1.5 Reclaimed materials. The machine may contain reclaimed materials to the maximum extent possible provided such materials will not jeopardize the intended use, performance or design life of the machine. Reclaimed materials shall have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used, rebuilt or remanufactured products are allowed under this specification.

3.1.6 Mercury restriction. The machine shall contain neither mercury nor mercury compounds, or be exposed to free mercury during manufacture.

3.1.7 Asbestos restriction. Asbestos and materials containing asbestos shall not be used on or in the machine.

3.1.8 Polychlorinated Biphenyl (PCB) restriction. The use of polychlorinated biphenyl on or in the equipment is prohibited.

3.1.9 Dissimilar metals. Dissimilar metals shall not be used in direct contact with each other without suitable means for preventing electrolytic corrosion.

3.1.10 Lubrication. Means shall be provided to ensure adequate lubrication of all moving parts. If the design of the equipment includes a recirculating lubrication system, the system shall include a cleanable or replaceable filter. Each lubricant reservoir shall have at least a 24 hour capacity and means for determining fluid level. All oil holes, grease fittings and filler caps shall be readily accessible.

3.1.11 Interchangeability. All parts of the end item shall be manufactured to definite standards and tolerances that will provide for the interchangeability of respective parts between end items of the same model without modification of the part or the machine. All replacement parts shall be available commercially within the continental United States.

3.1.12 Controls. All mechanical, electrical, hydraulic and pneumatic operating controls shall be located convenient to the operator's work station(s).

3.1.13 Digital readouts. All digital readouts shall display data in illuminated figures clearly legible at a distance of five feet and that give direct (horizontal) readings without requiring any calculation or interpolation. Each digit of the readout display shall be of the in-line type.

3.1.14 Workmanship. Workmanship of the equipment to be furnished shall be commensurate with the requirements of this specification and of such quality, which denotes the performance of skilled and experienced personnel trained in the field of work.

3.2 Construction. The machine shall be constructed of parts that are new, without defects and free of repairs. The machine construction shall include all components, parts, and features necessary to meet the performance requirements specified herein. All parts subject to damage from environmental hazards (such as dust, debris, or residue) shall be sealed or otherwise protected. The structure shall withstand all forces encountered during the operation of the machine to its maximum rating and capacity without permanent distortion or failure.

3.2.1 Castings and forgings. All castings and forgings shall be free of defects, scale, and mismatching. No processes such as welding, peening, plugging, or filling with solder or paste shall be used for reclaiming any defective part. Such processes may be used only for enhancing surface finish and appearance.

3.2.2 Welding, brazing and soldering. Welding, brazing or soldering shall be employed only where those operations are included in fabrication of the original design. These operations shall not be employed as repair measures for defective parts. Any excess material used for such operations shall be thoroughly removed from the part(s) upon completion of the operations. Weldments shall conform to AWS D1.1/D1.1M.

3.2.2.1 Soldering. Solder connections shall show evidence of good bonding in metal-to-metal contact. Cold solder joints, incomplete joining of solders and metal, excess or insufficient solder or damage insulation shall be considered sufficient reason for rejection of the equipment.

3.2.2.2 Cleaning. Any loose, spattered solder, flux, metal chips, insulation scrap or other foreign material shall be thoroughly removed from the equipment.

3.2.2.3 Cleaning agents. Flux for soldering shall be rosin and alcohol. No acid, acid salts or acid core solder shall be used in preparation for soldering of electrical connections

3.2.3 Fastening devices. All screws, pins, bolts, and similar internal and external parts shall be installed with means for preventing change of tightness and shall be minimum Grade 8. Fastening devices subject to removal or adjustment shall not be permanently installed. All fastening devices shall be tightened to torque limits such as established by the manufacturers standard for tightening to preclude loosening by normal operation or vibration.

3.2.4 Surfaces. All surfaces shall be clean and free of harmful or extraneous materials. All edges shall be either rounded or beveled unless sharpness is required to perform a necessary function. Except as otherwise specified herein, the condition and finish of all surfaces shall be in accordance with the manufacturer's commercial practices.

3.2.5 Painting. All mild steel surfaces shall be properly painted with a corrosion resistant paint in accordance with the manufacturer's standard commercial practice provided it results in a highly wear resistant finish which guarantees continued protection to the surfaces covered against all service conditions. Prior to painting, metal surfaces shall be prepared for painting in accordance with the paint manufacturer's instruction. A minimum of two coats of primer coat and two top coats of finish coat is required. Each coat shall have a minimum 3 mil thickness. The paint color shall be tool blue.

3.2.6 Threads. All threaded parts used on the machine and its related attachments and accessories shall conform to FED-STD-H28A.

3.2.7 Gears. All gears of spindle and axis drive trains shall conform to or exceed all provisions of AGMA 2001-D04, AGMA 2011-A98, and AGMA 2015-1-A01. The gears shall be of proper width and size to transmit full-rated torque and horsepower without failure for the expected service life of the machine. Gears in drive trains shall be hardened and ground steel. Working surface hardness shall be not less than Rockwell 48. The gears used in the machine and its components shall be machined in either the inch or metric system. The conversion factors and methods specified in AGMA ISO 1328-1 shall be used for conversion of metric units (SI) to U.S. Customary System of Units (US) for comparison purposes.

3.2.8 Measuring/Indicating devices. All measuring and indicating devices such as dial indicators, pressure gages, temperature indicators, depth stops, and other similar devices used on the machine shall be graduated in the U.S. Customary System of Units (US). Marking on all measuring and indicating devices shall be permanently and legibly engraved or etched on a non-glare background. All dials and other type indicating devices shall be securely mounted in place.

3.2.9 Dials. All dials used to indicate machine positions shall be graduated in increments not larger than 0.001 inch. Dial and handwheel circumferences shall be permanently and legibly engraved or etched on a non-glare background with graduations that can be read from the operator's normal working positions. All feed dials shall have independent zero adjustments and shall be calibrated in such manner the last dial graduation progresses into and is continuous with the first dial graduation as dial is rotated through the zero position.

3.2.10 Maintainability. The equipment shall be designed and constructed to permit Maintenance Personnel to easily service the equipment using a minimal number of tools. All parts subject to wear, breakage, or distortion shall be accessible for adjustment, replacement or repair. Consistent with required maintenance and design of the equipment, the Contractor shall provide any special tools required to service the Unit. The equipment shall be equipped with access covers to facilitate inspection, cleaning, and repair, or replacement of parts.

3.2.11 Controls, instrumentation, and indicators. All operating controls, instrumentation, and indicators shall be conveniently located for the operator at his normal work station and shall be located in such manner as to afford the operator safe ergonomic access. All such devices shall be clearly and legibly marked for function and identification. Each control shall be fitted with suitable handles, pushbuttons, or control knobs, as applicable. Gauges and instrumentation shall be designed for recalibration.

3.2.12 Operation environment. The equipment will be operated inside a production shop at the Norfolk Naval Shipyard. The equipment shall operate between 0 degrees to 125 degrees F and a relative humidity range of 30% to 95%.

3.2.13 Ventilation. The equipment shall be adequately cooled or ventilated to preclude premature deterioration of the equipment or any component thereof when utilized under the ambient and operating conditions specified herein.

3.3 Components. The machine shall consist of but not be limited to the following described principle components, attachments, and accessories necessary to meet the operational and performance requirements specified herein. Any additional components necessary for the fully operational and functional operation of the machine shall also be furnished in accordance with the manufacturer's standard practice or design of the machine.

3.3.1 Balancing Machine. The contractor shall design and build a vertical axis propeller balancing machine in accordance with the specifications below. The vertical axis propeller balance machine shall be capable of static balancing in a single plane all types of ship propellers to include SSN, MTS, LHA LHD, CVN, and SSBN propellers. The design and construction

shall include all components, parts, and features necessary to meet the requirements set forth herein. All parts and components shall be accessible for adjustment, replacement, and repair.

3.3.2 Portable Machine. The machine shall be portable. The portable machine will not be permanently installed on the foundation pad. The machine shall be capable of being crane lifted or moved with a forklift. The machine will sit on the foundation pad but not be permanently attached.

a. Capacity - Shall mount propellers weighing up to 100,000 lbs and up to 23 ft in diameter.

b. Rotational Angle - Shall indicate rotational angle accurate to plus or minus 0.5 degrees from any arbitrary zero setting.

c. Measured Imbalance - Range 0-50,000 ounce-inches accuracy, plus or minus 150 ounce-inches. Angular accuracy of measured imbalance within plus or minus 10 degrees of actual imbalance location.

d. Rotational Speed Range - 0-10 rpm (no accuracy requirement applies).

3.3.3 Frame. The frame shall have a minimum of three standoffs (feet) for leveling. The size of the standoffs shall be determined by the equipment manufacturer to support the weight of the equipment plus a maximum propeller weight of 100,000 lbs.

3.3.4 Motor. The rotating assembly motor shall be electric drive. Motor shall be rated for continuous duty and shall be equipped with ball bearings. If permanently lubricated type bearings are not used, grease fittings for periodic lubrication shall be easily accessible. Each motor shall be individually protected with a thermal overload and an over current device in accordance with applicable NFPA 70 standards. The manufacturer is to determine the size of the motor.

3.3.5 Spindle. The spindle shall be made out of steel. Maximum spindle diameter shall not exceed twelve inches in diameter.

3.3.6 Remote control panel. The remote control panel shall be mounted in a cabinet and shall be connected to the Propeller Balancing Machine. The remote control panel shall display the balancing information and shall be connected to the propeller balance machine by 50 foot long cables. The plug at the end of the cables shall be a quick disconnect Cannon Plug with locking collars sized to fit the cable. The cabinet will house the remote control panel, control switches, programmable logic controller or computer (download readings to a laptop or CD burner on the computer) as determined by the manufacturer, as well as any other necessary components as determined by the manufacturer. The cabinet shall be made of steel, with rollers on the bottom, and with a steel cable holder on the right hand side. The cabinet shall also have the capability of being lifted with a forklift and shall have padeyes for lifting with a crane as well (see 3.10).

3.3.7 Propeller positioning hardware. Propeller positioning hardware to be determined by the manufacturer that shall transmit a signal back to the cabinet to measure the centering of the

propeller. Propeller bore run-out shall be capable of being measured with the propeller installed and rotating. If applicable, centering requirements will be provided to the manufacturer during the design phase by Norfolk Naval Shipyard. The rotational speed of the propeller shall be fully adjustable and permit rotation in either direction and shall be controlled from the remote control panel. The rotation of the propeller shall be tracked using a rotary digital encoder and shall be displayed in degrees.

3.4 Electrical. The machine shall be designed for operation on a single electric service with a separate ground wire and a chassis ground stud or lug. The power requirements shall be determined by the equipment manufacturer. An Emergency Stop Button shall be provided on the equipment. The restarting of the equipment after losing power or resetting the emergency stop button shall be possible only by a deliberate operator action. The equipment shall be provided with a minimum 20 foot electrical cord if connection to 120 V power is required; otherwise, if 480V power is required then an electrical stub shall be provided with each foundation pad. All electrical components and wiring shall conform to and be located in accordance with applicable NEMA, ANSI, EIA, and NFPA standards for the intended application. Major electrical components shall be individually and clearly identified with permanent type label plates. All label plates shall be photo engraved aluminum and shall be attached with screws or nuts. The equipment shall be grounded with a ground stud or lug painted green and labeled "Equipment Ground". A supply circuit disconnect device, fusible motor circuit switch or circuit breaker, shall be provided and installed on the equipment. The equipment shall have state-of-the art controls that are current and shall not include any phase-out models. Solid-state design shall be employed throughout for electronic components. The use of selenium and other similar aging devices shall be permitted only in the application of voltage surge protection to the other solid-state components. Each solid state device shall be selected and installed to have characteristics and withstand ratings comparable with its intended function and application in assuring long life and reliability. Solid-state components shall not be adversely affected when subjected to radiation and conducted power line transients and surges typically experienced in a production type, industrial environment. Series and parallel connections of solid-state devices without forced sharing circuitry for voltage and current respectively shall not be permitted.

3.5 Fail safe. The equipment shall automatically shut down to prevent damage to itself, systems being cleaned, and operating personnel when the unit malfunctions, or is not operated in accordance with specified operating procedures. These items shall include, but not limited to, any other safety items specified herein. All alarms shall work in conjunction with an automatic process shutdown.

3.6 Physical dimensions. The physical dimensions of the propeller balancer base shall not exceed 6 feet long x 6 feet wide x 5 feet high unless approved by Code 980 in writing because of space limitations.

Note: The size of the caged area is approximately 2,400 square feet and has to house two propellers.

3.7 Adapter (concentric rings). Adapter (concentric rings) shall be provided by the manufacturer to fit inside the propeller bore to check the propeller and balance machine

alignment. Eight rings shall be provided in accordance with Norfolk Naval Shipyard Drawing No. 94 060 3M266-Center Plate Mfg Propeller Vertical Balance Machine (see Enclosure 5).

3.8 Weights and reports. The balancer shall provide computerized calculation of weight and position of weights to achieve a null balance. Computerized balancing report capability in downloading computer format to Microsoft System programs shall be provided. The computer report as a minimum shall identify the angle of imbalance relative to blade one, blade center axis (the propeller may need to be placed on the balancer at a known angular location or the machine shall be capable of allowing the zero degree location to be set at any location within 360 degrees) residual unbalance in ounce-inches.

3.9 Calibration. The vendor shall prepare a calibration procedure that tests the balancer and confirms it meets the operational specifications cited in 3.3.2. Preference is to use readily available commercial test equipment to perform the calibration. If necessary special fixtures or equipment may be used, but if so, they shall be supplied by the vendor as part of the contract. The vendor shall also prepare calibration procedure(s) that test the salient characteristics of any special fixtures and provide them to the government as part of this contract. Design specifications and calibration procedures for all items shall be prepared and supplied to the government for review and approval prior to manufacture of the balancer. All calibration processes and procedures shall comply with recognized standards and good metrology practice. In particular;

a. Calibration shall be performed using NIST traceable standards using technically sound methods.

b. Each calibration procedure supplied shall identify the equipment required to perform it by manufacturer, model, and nomenclature. The required range and accuracy of each pertinent characteristic shall be specified for each item.

c. A sufficient number of tests shall be performed during calibration for each measurement parameter to ensure the balancer meets the above specifications throughout its working range. Typically, between 3 and 10 measurements are made for each parameter.

d. A minimum Test Accuracy Ratio (TAR) of 4:1 will be maintained on all calibration tests.

e. The cognizant technical code for calibration issues is NNSY Code 137, Metrology Engineering. Contact Scott Smith at (757) 445-8811 or scott.c.smith3@navy.mil with any questions regarding this information.

3.10 Lifting /rigging. The equipment shall be provided with padeyes angled toward the centerline of the center of gravity for safe handling and transport by overhead crane. There shall be four padeyes located on the top of the machine and four padeyes located on the top of the cabinet, mounted on the structural frame which is attached to the base of the equipment. The lifting pad-eyes shall have a minimum 1 ½ inch diameter hole. The lifting pad-eyes shall be mild steel. The equipment, when suspended, shall hang as level as possible with the horizontal. The equipment shall be structurally sound such that it can withstand the compressive force generated

by the lifting wire rope sling. Please refer to the section below for Requirements for Lifting with a Crane and Lifting Sketch Requirements. The contractor is required to design the padeyes such that no spreader bar is required. Two lifting sketches as identified in Enclosures (1) and (2) shall be photo engraved black lettering etched on aluminum and mounted on the equipment (machine and cabinet) with appropriate galvanized or stainless steel hardware so that the sketch does not fall off. A lifting sketch shall be mounted on the side of the equipment (machine and cabinet). The lifting padeyes and associated welding shall be N.D.T. inspected with magnetic particle testing in accordance with NAVSEA T9074-AS-GIB-010/271. Testing documentation shall be provided with the shipping papers for off loading and with each manual; see Technical Data. All fillet welds shall be sized per AISC 325 (American Institute of Steel Construction) minimum weld size. Joint efficiency shall be 100 percent. The equipment shall also be capable of being moved with a forklift.

3.11 Hour meter. The unit shall be equipped with a totalizing type hour meter. This shall be of the non-setting type and shall have a minimum range of 0 to 25,000 hours in increments of one hour. The least significant digit on the meter readout shall be one hour. Lesser increments are not acceptable. Upon reaching the maximum accumulative hours, the meter readout shall automatically revert to zero and continue to totalize time. The meter shall be designed to prevent the entrance of dust and moisture and shall be mounted to withstand shock and vibration generated by the equipment. The meter shall be located as to be readily visible, but not subject to abuse relative to the operating environment of the equipment.

3.12 Instruction plates. All markings on caution-warning plate, identification and lubrication plates, charts and instructions shall be in the English language. Alphanumeric characters shall be engraved, etched, embossed or stamped in bold face letters on a contrasting background.

3.12.1 Caution-warning plates. Corrosion resistant "Caution" or "Warning" plates shall be securely attached to the equipment in a visible location. Safety precautions to be observed by the operator or maintenance personnel shall be permanently marked on the plates.

3.12.2 Identification plate. A corrosion resistant metal nameplate shall be securely attached to the outer surface of the equipment without the use of adhesive tape or glues. The nameplate shall be visible from the operator's position. Alternate nameplate locations are acceptable only if equipment design will not permit mounting which is normally visible to the operator. The nameplate shall be engraved (not hand etched or stamped) with the captions listed below and the corresponding information for each caption. The characters shall be a different color than the face of the nameplate for ease of reading. If the equipment is a special model, the model designation shall include the model of the basic standard and a suffix identified in the manufacturer's permanent records. The captions listed may be shortened or abbreviated, provided the entry for each caption is clear as to its identity:

a. Nomenclature

b. Manufacturer's Name

c. Manufacturer's Model Designation

d. Manufacturer's Serial Number

e. Power Input (volts, total amps, phase, frequency)

f. Contract Number or Order Number

g. Date of Manufacture

h. Navy Identification Number (To be provided by Norfolk Naval Shipyard after contract award and prior to delivery)

3.12.3 Lubrication Chart or Plate. A lubrication chart or plate shall be permanently and securely attached to the machine. The following information shall be furnished on the chart or plate:

a. Point of lubrication

b. Service interval

c. Type of lubricant

d. Viscosity

3.12.4 Special instructions plate. A corrosion resistant metal instruction plate shall be securely attached to the machine at a suitable location. The instruction plate shall describe any special or important procedures to be followed in operating and servicing the equipment.

3.12.5 Control panels, instruments, and plates. Wording and numbers on control panels, instruments, and plates shall be in the English language, permanently and legibly displayed in boldfaced characters on a contrasting background.

3.12.6 Modes of operation. An operating instruction plate, which specifies proper unit operation in all modes of operation.

3.12.7 Labeling-The gross weight of the machine and cabinet shall be stenciled on each side of the machine and cabinet in two inch high black lettering.

3.13 Inspection and non-destructive testing (NDT) methods. Inspection and non-destructive testing methods (per NAVSEA T9074-AS-GIB-010/271) shall be performed where applicable. Only personnel qualified in NDT will perform testing work (See Personnel Qualification and Certification in Non-Destructive Testing: SNT-TC-1A). Use of the latest methods and publications are expected unless otherwise indicated. Testing documentation shall be provided with the shipping papers for off loading and with each manual. Magnetic Particle Testing in accordance with MIL-STD 1907 and ASME E1444 shall be used on the equipment:

3.14 Installation. Installation shall be the responsibility of the contractor and shall include all excavation, foundations, material, labor, etc. required to properly install and make the equipment operable at the destination. The government is responsible for off loading and locating the equipment within reach of a power source for electrical connection as well as locating the equipment in a suitable location for the manufacturer to conduct the operational test at destination and to conduct the training. The equipment and cabinet shall be on a skid when delivered to Norfolk Naval Shipyard.

3.15 Concrete Construction. Concrete construction shall conform to the requirements of ACI 301 and ACI 318 having a minimum ultimate compressive strength of 4,000 psi at 28 days. Cement shall conform to ASTM C 150, Type 2 or Type 4 and compressive strength at 7 days shall exceed 3,000 psi prior to placement of equipment on slab. Aggregate shall conform to ASTM C33, with 1 1/2 inch maximum size. Reinforcing steel shall conform to A706-GRADE 60. Calcium chloride shall not be used. Compressive strength tests shall be performed for one set of five specimens for each foundation pad. All sampling and testing shall be performed by an NPCA Certified Plant, Quality Control Department or the independent testing laboratory identified below. Accomplish work in accordance with ACI publications except as modified herein. Protect materials from contaminants such as grease, oil, and dirt.

McCallum Testing Laboratories
Chesapeake Va.
757-420-2520

3.15.1 Concrete pads (Foundation Pads). The contractor shall provide two concrete pads that are a minimum of 12 ft W x 12 ft L. The top surface of the concrete pad shall be three inches above the surrounding floor level tapered with the existing floor level to support a maximum propeller weight of 100,000 lbs based on an assumed allowable soil pressure of 1,000 psf or contractor may determine the actual soil pressure. The contractor will design two fully supportive reinforced concrete pads for total loads including equipment weight for bearing on soil. Contractor shall provide means of integral attachment of new slab to existing concrete floor along entire perimeter of new slab. Use of epoxy grouted anchors is acceptable, subject to approval of manufacturer's instructions. If piles are required, lumber shall not be used and piles shall be installed by non-vibratory methods.

3.15.2 Concrete. Contractor furnished mix design shall comply to ACI 211.1 and ACI 318M/318RM except as otherwise specified. The compressive strength (f'c) of the concrete for each portion of the structure(s) shall be as indicated and as specified below.

Location	f'c (Min. 28-Day Comp. Strength) (psi)	ASTM C 33 Maximum Nominal Aggregate (Size No.)	Range of Slump Inches
Pad 1	4,000	57	2-4
Pad 2	4,000	57	2-4

Entrapped air shall be 3% or less.

a) Test cylinders. At least three test cylinders for each test age shall be made and cured in accordance with ASTM C 192/C 192M and tested in accordance with ASTM C 39 for 7 and 28 days. Test cylinders shall be stored on-site in similar conditions to the foundations.

3.15.3 Materials:

a) Water - Water shall be fresh, clean, and potable; free from injurious amounts of oils, acids, alkalis, salts, organic materials, or other substances deleterious to concrete.

b) Aggregate - Aggregates shall not contain any substance which may be deleteriously reactive with the alkaline in the cement.

c) Admixtures - Do not use calcium chloride admixtures.

3.15.4 Placing Reinforcement and Miscellaneous Materials- ACI 301. Provide bars, wire fabric, wire ties, supports, and other devices necessary to install and secure reinforcement.

a) Reinforcement Supports - Place reinforcement and secure with galvanized or non corrodible chairs, spacers, or metal hangars.

b) Cover - ACI 301 for minimum coverage, unless otherwise indicated.

3.15.5 Surface Finishes Except Floor, Slab, and Pavement Finishes:

a) Defects - Remove minor honeycombs, pits greater than 1 square inch surface area or 0.25 inch maximum depth, or otherwise defective areas. Concrete with extensive honeycomb including exposed steel reinforcement, cold joints, entrapped debris, separated aggregate, or other defects which affect the serviceability or structural strength will be rejected, unless correction of defects is approved. The surface of the concrete shall not vary more than the allowable tolerances of ACI-MCP-4. Exposed surfaces shall be uniform in appearance and finished to a smooth broom finish unless otherwise specified.

b) Not Against Forms (Top of Walls) - Surfaces shall be finished with hand floats to even surfaces. Finish shall match adjacent finishes.

3.15.6 Curing and Protection. ACI 301 unless otherwise specified. Do not allow concrete to dry out from time of placement until the expiration of the specified curing period. Do not use membrane-forming compound.

a) Fog Spraying or Sprinkling-Apply water uniformly and continuously throughout the curing period.

3.15.7 Field Quality Control:

a) Sampling per ASTM C 172. Collect samples of fresh concrete to perform tests specified. ASTM C 31/C 31M for making test specimens.

b) Testing:

1) Slump Tests - ASTM C 143/C 143M. Take concrete samples during concrete placement. Perform tests at commencement of concrete placement, when test cylinders are made, and for each pad (minimum) or every 10 cubic yards (maximum) of concrete.

2) Compressive Strength Tests-ASTM C 39. Make five test cylinders for each set of tests in accordance with ASTM C 31/C 31M: Precautions shall be taken to prevent evaporation and loss of water from the specimen. Test two cylinders at 7 days, two cylinders at 28 days, and hold one cylinder in reserve for each foundation pad. For the entire project, take no less than two sets of samples and perform strength tests for each pad of concrete placed. Each strength test result shall be the average of two cylinders from the same concrete sample tested at 28 days. If the average of any strength test results is less than f'c or if any strength test result falls below f'c by more than 500 psi, take a minimum of three ASTM C 42/C 42M core samples from the in-place work represented by the low test cylinder results and test. Concrete represented by core test shall be considered structurally adequate if the average of three cores is equal to at least 85 percent of f'c and if no single core is less than 75 percent of f'c. Remove concrete not meeting strength criteria and provide new acceptable concrete. Repair core holes with non shrink grout.

3.15.8 Power at pads. Per 3.4, if the equipment requires 480V power, then contractor shall provide underground power feed from nearest available source with electrical stub at each foundation pad.

3.15.9 Existing site. The contractor shall completely research the existing site and gain complete knowledge of the existing conditions and electrical sources. Subsurface drawings are available at Norfolk Naval Shipyard for contractor review. NNSY will clear the work site of all equipment, debris, and loose material prior to contractor beginning work on the foundation. The contractor shall be responsible for abiding by any additional requirements imposed on the contractor by Norfolk Naval Shipyard as a result of the review and approval of drawings.

a. The contractor will be responsible for identifying what is under the floor (i.e., utilities, etc.) for the effected area.

b. Demolition of existing floor shall meet sampling requirements of NNSY Code 106 prior to the start of work. Samples of concrete are required prior to saw cutting or demolition work that may cause airborne particulates. Excavation requirements are per Enclosure (4).

c. The contractor will be responsible for the demolition of the existing floor and to prepare a new foundation per contractor's certified drawing approved by Norfolk Naval Shipyard. The contractor shall provide all excavation, earth moving equipment, lifting, and transport equipment as required for the job.

d. The contractor will be responsible to re-route existing underground utilities as required to place the new concrete pads. The contractor shall coordinate the outages per Note 4, Installation Responsibilities. The contractor shall research and provide a list of all mechanical utilities, facilities, and equipment that are affected by all required outages, as part of the design. For electrical work, the contractor shall research and provide a list of all circuits, equipment and areas that are affected by all required outages, as part of the design. All electrical work shall be performed on de-energized equipment and wiring: no "Hot" work is allowed.

e. Prior to the start of any excavation work, the contractor shall construct a containment around the excavation site to minimize dust. With prior Code 106 approval, contractor can use wetting to minimize dust in lieu of containment. The contractor shall remove from the work site and dispose of all construction waste in accordance with applicable laws and regulations, including local Authority or Installation regulations per Code 106 direction.

3.16 Installation of equipment. The contractor shall complete the installation of the two concrete pads prior to delivery of the equipment. Norfolk Naval Shipyard will set the machine on the foundation and the contractor will level the machine and connect power.

3.17 Hot Work Permit. The contractor shall be responsible for obtaining a Hot Work Permit from the Norfolk Naval Shipyard Fire Department, phone number (757) 396-3333 prior to any burning or welding. When using a grinder for grinding allowed metal, no hot work permit shall be required as long as the diameter of the grinding wheel does not exceed three inches. Should the contractor decide to use a grinder with a grinding wheel that exceeds 3 inches in diameter, the contractor shall be required to obtain a Hot Work Permit.

3.18 Space and equipment requirements. The contractor shall identify space requirements and equipment requirements necessary to perform work for approval by Norfolk Naval Shipyard.

3.19 Storage and debris. During the process of the work, the contractor shall confine his apparatus, storage of materials, and the operation of his personnel within reasonable limits as specified by the receiving activity. The receiving activity will designate a suitable storage area. All equipment and unused materials shall be removed from the premises upon completion of work. The premises shall be kept satisfactory to the receiving activity.

3.20 Waste management. Any waste generated at Norfolk Naval Shipyard is Norfolk Naval Shipyard's cradle to grave responsibility. A contractor shall be aware of how his job's waste is to be handled per Enclosure (4).

3.21 Technical data. All documentation shall be shall be written in the English language and be grammatically correct. The equipment shall require five (5) identical sets of technical data (1 set in hard copy form and 4 sets on a compact disc). The technical data shall consist of as-built drawings of the equipment and foundation pads, and schematics covering operating instructions, maintenance instructions, parts breakdown schematics, electrical schematics, lubrication points, gauges/instruments calibration results, NDT and magnetic particle test results, and parts list showing part numbers shall be required. Also, the warranty, calibration procedures with

calibration test equipment, audible noise test results, foundation pad design calculations, concrete mix design data and laboratory reports, slump tests, compressive strength tests, and energy control summary shall be required. A suggested spare parts list to cover maintenance and servicing during the first year of operation with manufacturer's name and part number shall be provided. One copy of the software shall accompany the equipment. Engineering drawing practices shall conform to ASME Y14.5M. All technical material (including fold up schematics and drawings) shall be bound and/or held together by loose-leaf binders. Clear loose-leaf sheet protectors (with an opening at top only) are acceptable for inserting fold up schematics and drawings in a loose-leaf binder. The title block to each schematic and drawing shall be showing and readable without unfolding or removing from a manual. All technical material shall be legible and not require magnification to read. All five sets shall accompany the equipment at time of delivery. The manufacturer's equipment serial number shall be identified on the technical data.

3.21.1 Advance engineering package. Within ninety (90) days after award of the contract, the contractor shall provide an advance engineering package in hard copy for review and approval by the government before production begins. The contractor shall provide four identical sets of the advance engineering package to the contracting officer. The advance engineering package shall include, but not be limited to, the following:

a) Detailed fabrication drawings with electrical, structural, mechanical, welding, control layout, etc. with complete parts list. The drawings shall include a layout of the entire system in three (3) views.

b) Design calculations. Certified design calculations for the foundation pads and certified foundation pad drawings (formwork and reinforcing steel) shall be provided. Formwork drawings shall show detail of formwork including; joints, supports, studding and shoring. Reinforcing steel drawings shall indicate assembly diagrams, splicing and laps of bars, shapes, dimensions, and details of bar reinforcing, accessories, and concrete cover.

c) Lifting/rigging diagram. A lifting/rigging diagram per Enclosures (1) and (2) shall be provided for the machine and the cabinet. Design calculations along with a letter that states that the requirements of Item 1 under Enclosure (1)-Requirements for Lifting with a Crane have been met.

d) A calibration procedure that tests the balancer and a calibration procedure that tests the calibration equipment or special fixtures shall be supplied as per 3.9.1. The procedures shall be in the English language.

e) An Energy Control Summary per Enclosure (3) shall be provided.

f) Operational and performance test procedures. Two copies of the manufacturer's in-process inspection, warm-up procedures, standard performance, and operational test procedures shall be submitted with the initial proposal for review and acceptance by the facility representative. All technical material shall be legible and not require magnification to read or to review. Components on drawings shall be clearly identified. NNSY will review and approve or

disapprove the advance engineering package within 30 days after receipt. No material procurement or manufacture of the propeller balancer or foundation work is to commence until approval by NNSY in writing.

3.22 Test and evaluation report. The contractor shall prepare a test and evaluation report (MIL-STD-831; Test Reports) for those tests specified in 4.6.1 and 4.7.2. The report shall be detailed enough to cover the full operation of the equipment and all of its components. Test reports shall be submitted to the contracting officer two days after the Test at Origin.

3.23 Concrete mix design submittal. Thirty days prior to concrete placement, submit a mix design for each strength or type of concrete. Submit a complete list of materials including type; brand; source and amount of cement, fly ash, pozzolans, silica fume, ground slag, and admixtures; and applicable reference specifications. Provide mix proportion data. Submit copies of laboratory test reports showing that the mix has been successfully tested to produce concrete with the properties specified and that mix will be suitable for the job conditions. Submit proof that the concrete production facility has had a record of at least 10 consecutive successful mix design tests.

3.24 Compressive strength test and slump test submittals. The contractor shall submit test results within seven days of performing compressive strength test and slump tests.

3.25 Start-up. Start-up of the equipment at Norfolk Naval Shipyard shall commence not later than 14 days after delivery in Building 163. The start-up of the machine by the manufacturer shall as a minimum consist of the following:

a. Inspect the machine and cabinet

b. Ensure the machine is properly leveled

c. Check the machine calibration

d. Run time (see 4.6.1)

3.26 On site training. On site training shall commence within 14 days after receipt of the equipment by NNSY. The services of a qualified representative shall be provided to train personnel at NNSY. The representative shall be an American citizen of good standing and repute. The training period shall not be less than two consecutive workdays to instruct personnel of the journeyman mechanics level in the proper operation (proper machine setup, remote control station operation, software features if applicable, etc.) and maintenance of the equipment. The training shall include an operational test. The contractor shall provide ten hard copies of the training literature (operations and maintenance manual) in the English language.

3.26.1 Training coordination. The contractor shall coordinate the training schedule with contracting officer and NNSY customer point-of-contact: Jennifer Clark at NNSY; 757-396-8164 or C980 alternate representative if Jennifer Clark is unavailable at 757-396-8925.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. The contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein.

4.2 Responsibility for compliance. All items shall meet all requirements of Sections 3, 4,and 5. The inspections set forth in this specification shall become a part of the overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted for acceptance comply with all requirements. The contractor may utilize his own facility or any other commercial facility acceptable to the government. The government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to the prescribed requirements. When required, the contractors measuring and testing equipment shall be made available for use by the Government representative to determine conformance of product with contract requirements.

4.3 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. Quality Conformance Inspection (see 4.6)

b. Acceptance test (see 4.7)

4.4 Inspection conditions. All inspections, tests, and examinations shall be performed in an indoor facility with ambient conditions of 55 degrees F to 100 degrees F and 10 percent to 95 percent relative humidity.

4.5 Examination. The equipment shall be examined for design, dimensions, construction, materials, components, electrical equipment, workmanship and all other requirements to determine compliance with this specification.

4.6 Origin inspection. Quality Conformance Inspection shall be applied at origin to each item being offered under this specification. Quality Conformance Inspection shall consist of the inspection in 4.2, the examination in 4.5, all tests under 4.6.1 and 4.7.2. Operational test at origin (4.6.1) shall be performed by a qualified factory representative on the equipment and witnessed by a NNSY C980 or other designated representative. The government reserves the right to waive a representative at the Test at origin. The machine shall pass the examination, all tests, the inspection, and the audible noise test to be accepted.

4.6.1 Test at origin. The equipment shall be operated for a time frame of not less than sixteen (16) hours to properly verify the successful operation of the equipment and all of its component parts, relative to the design, construction and per conformance criteria established in the design requirements.

4.7 Final inspection/acceptance test. Final acceptance testing shall be performed on machine to ensure conformance with this specification. The final acceptance test shall be performed only

after the machine is located at the final location. The final acceptance test shall consist of the examination in 4.5, and all tests in 4.7 through 4.7.2, to be accepted. Final acceptance of the supplies furnished shall be made at destination by government within 30 days after all acceptance requirements have been met. Acceptance shall be based upon satisfactory completion of the examination and tests at destination.

4.7.1 Test at destination. The equipment shall be operated for a time frame of not less than four hours to properly verify the successful operation of the equipment and all of its component parts, relative to the design, construction and per conformance criteria established in the design requirements.

4.7.2 Audible Noise Test. The equipment shall be tested in such a manner as to determine conformance with 3.1.3. For each measurement, the microphone shall be located on a straight line which is perpendicular to the sound source being measured at the specified distance of three (3) feet. The measurements shall be measured on the "A" weighted scale of a standard Type II sound level meter. The contractor shall provide test report to verify that the equipment meets the audible noise levels (see 3.1.3).

5.0 STANDARD COMMERCIAL WARRANTY. The contractor shall extend to the government the full coverage of any standard commercial warranty normally offered in a similar commercial sale, provided such warranty is available at no additional cost to the government. The standard commercial warranty period shall begin upon final acceptance of the applicable material and/or services listed in the contract. The warranty shall cover a period of 12 months.

6.0 SHIPPING INFORMATION

6.1 Preparation of delivery. Prior to packaging for delivery, the equipment shall be cleaned, drained if necessary and all open components covered to prevent damage.

6.2 Packaging and packing. The supplies shall be preserved, packaged and shipped in accordance with ASTM D-3951 (Standard Package for Commercial Packaging).

6.3 Packing. Material shall be packed for shipment in such a manner that will insure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Interstate Commerce Commission Regulations, Uniform Freight Classification Rules or Regulations of other carriers as applicable to the mode of transportation.

INSTALLATION RESPONSIBILITIES

Government	Contractor	
()	(XX)	a. Provide and install foundation pads in accordance with the requirements of this specification.
(XX)	()	b. Furnish labor and material handling equipment for off-loading and placing item on foundation.
N/A, machine is not		permanently affixed to the foundation.
()	(XX)	c. Set and rough level the machine on its foundation.
()	(XX)	d. Level and align machine.
()	(XX)	e. Connect machine to the provided utilities hook-up.
()	(XX)	f. Provide all necessary materials, tools, gages and instrumentation necessary to perform the required tests.
()	(XX)	g. Provide and charge all systems with fluids in accordance with manufacturer's instructions.
(XX)	()	h. Propeller will be provided for performance testing at Government facility. If propeller is not available, then the machine will be operated without the propeller.

GOVERNMENT RESPONSIBILITIES

(XX) Provide unobstructed utilities hook-up within 20 feet of machine.

NOTES:

1. ON-SITE REGULATIONS. The contractor shall comply with all regulations, including safety practices, environmental directives and security clearance restrictions governing the operation of the premises. Installation shall be performed in a manner not to unreasonably interrupt or interfere with the receiving activity's normal business routine. Work performed outside the normal working hours of the receiving activity shall be done only with written approval of the receiving activity and at no additional cost to the Government.

2. FACILITES. Electricity, water, and toilet facilities required during installation will be provided by the receiving activity.

3. PROTECTION OF GOVERNMENT PROPERTY. During execution of the work, the contractor shall protect Government property. The Contractor shall return areas damaged as a result of negligence under this contract to their original condition at no cost to the Government.

4. UTILITY OUTAGES. If any utilities or other services must be disconnected (even temporarily) due to scheduled contract work, the Contractor shall coordinate with the Norfolk Naval Shipyard technical point of contact. Outages require at least 15 days advance notice to arrange.

5. EXCAVATION SAFETY. Provide appropriate lighted safety barricades around all excavations. Lighted barricades shall be placed at each corner of an excavation and spaced not greater than 8 feet between each barricade. Areas between barricades shall be roped off from barricade to barricade with a reflective type tape.

6. ADMITTANCE TO THE WORK SITE. Upon contract award, employees or representatives of the Contractor will require access to the Receiving activities Controlled Industrial Area (CIA) and shall be admitted to the work site only after they have been issued a Security Pass/ID Badge. Access to The receiving activities Controlled Industrial Area (CIA) is restricted as follows:

a. Contractor personnel requiring access into the CIA will be required to provide personal background information to the extent necessary to obtain a Security Pass/ID Badge.

b. Within one week prior to start of work, each employee or representative of the Contractor requiring access to the work site shall submit to a security background check.

c. The Government will provide a standard background information data form. This form can be obtained from the Contracting Officer or the Receiving Activity Point of Contact.

d. Each person shall complete and submit a set of forms for processing.

e. Each person will be required to provide proof of U.S. citizenship prior to entry. Each individual will need to present a signed and certified copy of the Employment Eligibility Verification, Form I-9 (Rev. 05/31/05)Y, which was submitted with the individuals employment application. The Shipyard Pass Office will use the Form I-9 to further verify base access eligibility. Please note that a base pass will not be issued without a signed and certified copy of the individuals Form I-9.

f. It shall be the Contractor's responsibility to collect and account for all Security Pass/ID Badges issued to their personnel at the expiration of the contract or when access is no longer required.

g. Foreign Nationals or Affiliations - Foreign Nationals (non U.S. Citizens) or persons affiliated with, or employed by, a foreign, or foreign owned company will not be granted access to the CIA.

7. WORK PERMIT. The contractor shall coordinate with the Norfolk Naval Shipyard technical point of contact to obtain a work permit prior to the start of any work. The work shall be adequately described by the contractor in drawings and/or descriptions to adequately convey how the work will impact NNSY facilities. The contractor should allow one month to receive the work permit.

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8. RESTRICTIONS

a. Parking - Vehicles and equipment required by the Contractor to complete this contract shall be registered with Government Security.

b. Vehicle passes and permits may be obtained through the Receiving Activity Pass Office/Parking Control.

c. Contractor vehicles shall be marked on the outside with the company name or logo or both. Failure to comply will result in ticketing and/or loss of vehicle privileges.

d. Regular Working Hours - All work is to be performed during the receiving activity's regular work hours from 7:30 a.m. to 4:00 p.m., Monday through Friday except for Federal Holidays. If the Contractor desires to work on Saturdays, Sundays, holidays, or outside the regular or specified hours/days, the Contractor shall submit a request to the receiving activity POC for approval a minimum of two (2) working days prior to the anticipated work date. In no event shall a Contractor carry on work outside the hours and days specified in the contract without prior approval.

e. Restricted Colors - The Government uses the colors magenta, yellow, red and blue to identify specially controlled materials. The Contractor is specifically prohibited from using magenta, yellow, red or blue colored plastic wrapping materials or bags, tape, or other covering materials.

f. Radio Restrictions - Operation of privately owned citizens band or amateur radio equipment (receive and transmit) within the geographic limits of the Government is prohibited. All radio equipment installed in privately owned motor vehicles shall be turned off upon entering the Government premises.

g. Privately Owned Personal Computers - The use of privately owned personal computers by contractor personnel at the receiving activity is restricted.

h. Photography/Recording - Contractor personnel are prohibited from having photographic equipment, tape recorders, or other recording devices in their possession while inside the Government Controlled Industrial Area (CIA).

i. Cell Phones – Contractor personnel are prohibited from having cell phones with photographic or other recording devices in their possession upon entering the Government premises.

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Requirements for Lifting with a Crane

1. The equipment shall be outfitted with suitable attachments for overhead lifting.

1.1 For multiple point lifts, each lifting attachment shall be capable of supporting one half the gross weight of the equipment with a design factor of five to one based on ultimate strength. For single point lifts the lifting attachment shall be capable of supporting the gross weight of the equipment with a design factor of five to one based on ultimate strength.

1.2 For multiple point lifts each lifting attachment shall be designed to accept a standard anchor shackle (Federal Specification RR-C-271D, type IVA) which is capable of supporting one half the gross weight of the equipment. For single point lifts the lifting attachment shall be designed to accept a standard anchor shackle (Federal Specification RR-C-271D, type IVA) which is capable of supporting the gross weight of the equipment.

1.3 Lifting attachments shall be such that the attachments and shackles are not side loaded more than 10° out of the plane of the attachment unless specified by the manufacturer. Lifting attachments shall be located such that the lifting slings do not contact the equipment, or alternatively a spreader beam certified to NAVFAC P-307 shall be provided. Whenever practical, the lifting attachments shall be located above the center of gravity, and such that the lifting slings do not contact the equipment housings.

1.4 Where multiple point lifting attachment points and/or tie-down points exist (i.e., forklifts and aerial platforms), each lifting attachment shall be conspicuously marked or identified.

2. The equipment shall be marked in a prominent location with the gross weight. Marking shall include the units (pounds).

3. The equipment shall be provided with a lifting sketch / rigging diagram that meets the requirements of Enclosure 2.

3.1 The lifting sketch shall detail any specific requirements and / or configurations that shall be met prior to lifting (i.e. "engage swing lock", "Tilt mast back fully", "Rotate lifting basket over side", "Utilize 10' minimum length slings", and "Spreader beam required").

3.2 The lifting sketch shall include the location of the equipment center of gravity dimensioned on the sketch, equipment model/manufacturer, and gross weight.

3.3 A copy of the lifting sketch shall be provided with the equipment and copies shall be forwarded to the contract originator and Code 714 (396-3345/ 3346). The lifting sketch shall be posted on the equipment and attached with appropriate hardware so that the sketch does not fall off. The lifting sketch shall be photo engraved black lettering etched on aluminum.

4. If specialized handling gear, other than shackles, standard slings, or chain hoists, is required (i.e., spreader beams and special lift rigs), the contractor shall provide it unless NNSY previously agrees to furnish this gear.

5. Sand hoppers, tubs, or other containers that may contain material shall be marked with the empty and full weight (or alternatively the empty weight and safe working load).

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Lifting Sketch Requirements

Lifting sketches, as a minimum, shall identify the following:

1. The weight of the load.

2. The location of the center of gravity dimensioned on the drawing.

3. The minimum capacity / length of slings.

4. The minimum capacity of other standard rigging gear.

5. The attachment (lifting) points for the load

a. The attachment points for multiple leg lifts shall be sized such that each attachment point can support half the load's weight at the anticipated lift angle.

b. The attachment point for single leg lifts shall be sized such that the attachment point can support the entire load's weight.

6. Limitations on allowable orientations for any parts making up the lifting assembly.

7. For single leg vertical lifts using twisted rope (wire or synthetic), two parallel ropes each capable of supporting the entire load alone shall be required unless a method is used to prevent unlaying the rope.

8. A minimum D/d ratio of one shall be required where wire rope slings pass over any object, or in the eyes of wire rope slings. A minimum D/d ratio of two shall be required where synthetic rope slings pass over any object, or in the eyes of synthetic rope slings.

a. "D" represents the diameter of the object the sling passes over.

b. "d" represents the diameter of the sling.

c. Table 14-3 of NAVFAC P-307 lists efficiency factors at various D/d ratios.

9. Components in each handling assembly shall be sized based on the worst case distribution of loads.

Note: When making a two, three, or four point lift, the handling gear shall be sized so that two legs can support the load without exceeding the safe working load (SWL) at the lift angle expected, unless an equalizing method is used.

10. When non standard gear is required (i.e. round stock lifting bars) written instructions shall be provided that ensure:

a. The proper material is being used,

b. The item is certified.

c. Any special requirements or dimensions are followed to ensure that engineering assumptions are met (i.e. eccentricity of the bearing points).

ENERGY CONTROL SUMMARY SPECIFICATION

The manufacturer shall provide a summary sheet from their standard commercial technical manual that identifies the section and/or page in the technical manual that addresses the following items below for the energy control summary.

Energy Control Summary:

1. Identification of all hazardous energy sources:
   a. Mechanical
   b. Electrical
   c. Hydraulic
   d. Pneumatic
   e. Chemical
   f. Laser
   g. Radiation
   h. Thermal
   i. Natural Gas
   j. Stored or residual energy such as electrical capacitors, elevated movable components, springs, etc.
   k. Potential energy such as counter weights, etc.
   l. Other

2. Isolation of the energy source that identifies sequence of steps to follow for energy isolation and sequence of steps required to remove isolation devices

3. Lockout/tag-out guidelines

4. Shutdown and start-up procedures

5. Any special health, safety or environmental precautions which shall be followed

6. Equipment configurations which shall be performed prior to maintenance

7. Servicing/Preventive maintenance and lubrication schedule (inspections, daily, monthly, etc.)

8. Replacement and/or recommended spare parts listing

NNSY will use this information to develop an Energy Control Procedure in accordance with 29 CFR 1910.147, OSHA's Energy Control Standard, to bring the machine or equipment to a zero energy state while servicing and/or maintenance is being performed. If there is an item above that is not included in the standard commercial technical manual, then please indicate as such.

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Enclosure 4 is only required when part of the contractors scope of work includes on-site demolition and/or waste management and disposal. This appendix is to be included unchanged unless directed otherwise by C/100.

SCOPE

1. This appendix is intended to provide Contractors personnel with information which reflects government environmental and safety issues they may incur during their work at Norfolk Naval Shipyard, Portsmouth, VA.

APPLICABLE DOCUMENTS

2. The following documents form a part of this appendix to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of an invitation for bids or a request for proposals shall apply.

Code Of Federal Regulations

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 261	Identification and Listing of Hazardous Waste

(Application for copies should be addressed to Superintendent of Documents, Government Printing Office, Washington, DC 20402)

ENVIRONMENTAL

3. Contractors working at the receiving activity are required to perform their work in compliance with all Federal, State, and local regulations pertaining to the environment.

3.1 The contractor shall coordinate all environmental protection matters with the Contracting Officer. The Activity Environmental Protection Coordinator or other authorized officials may inspect any of the facilities operated or maintained by the Contractor at any time and without prior notice.

3.2 If a regulatory agency assesses a monetary fine against the Government for violations resulting from Contractor actions, the Contractor shall reimburse the Government for the amount of the fine and related costs.

3.3 The Contractor will clean up any oil or chemical spills resulting from work operations at no expense to the Government. The contractor shall not create a nuisance or hazard to the health of military or civilian personnel.

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DEFINITIONS - TECHNICAL

4.1 Contractor. The term Contractor refers to both the prime Contractor and subcontractors. The prime Contractor shall ensure that his/her subcontractors comply with the provisions of this contract.

4.2 Hazardous Material (HM). Any material which, by virtue of its potentially dangerous nature (e.g., toxic, flammable, corrosive, oxidizing, irritating, sensitizing, reactive), requires controls in its use, packaging, handling, storage, or stowage, to assure adequate safety to life and property. This definition is intended to apply to proprietary industrial, commercial, or locally prepared blends, mixtures, formulations, or compounds of gases, liquids, and solids intended for use at the job site.

4.3 Hazardous Waste (HW). Any material that:

a. Is regulated as a Hazardous Material per 49 CFR 173.2, or

b. Requires a Material Safety Data Sheet (MSDS) per 29 CFR 1915.99 or 29 CFR 1910.1200

c. During end use, treatment handling, packaging, storage, transportation, or disposal meets or has components which meet or have potential to meet the definition of a Hazardous Waste as defined by 40 CFR 261 Subparts A, B, C, or D.

4.4 Solid Waste (SW). Any discarded material that is abandoned by being disposed of, burned or incinerated, recycled or considered "waste-like." A solid waste can physically be a solid, liquid, semi-solid, or container of gaseous material.

HANDLING AND DISPOSAL OF WASTE

5.1 The receiving activity is the owner of all waste (hazardous or otherwise) generated within its facilities. This includes waste generated by contractor personnel while working at the receiving activity.

5.2 Waste Identification And Designation. Any item or material not incorporated into the project and not reusable will be considered a waste. The Contractor is responsible to identify all waste to be generated or produced by their performance of this contract.

5.3 Non-Hazardous Waste. The Contractor shall dispose of debris and rubbish resulting from the work under this contract.

5.4 Hazardous Waste. The Contractor shall dispose of all hazardous waste in accordance with the Resource Conservation and Recovery Act and all other applicable federal, state and local laws and regulations. No on-installation disposal of hazardous waste is allowed. All NNSY hazardous waste in Contractor provided containers by NNSY Code 106.3.

5.4.1 Hazardous Material Use. The Contractor shall ensure that procedures are in place to deal with hazardous materials, pursuant to the FAR Clause 52.223-3, HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA.

5.5 Hazardous Material/Hazardous Waste. The Contractor shall provide and maintain for the life of the contract, environmental protection as defined. Plan for and provide Environmental Protective measures to control pollution that develops during the normal course of work. Plan for and provide environmental protective measures to correct conditions that develop during the normal course of work. Comply with Federal, State and Local regulations pertaining to the environment, including but not limited to water, air and noise pollution. Ten days after the award of the Contract, the Contractor shall meet with the Contracting Officer to discuss the proposed Environmental Protection Plan and to develop mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, and other measures to be taken.

5.6 Hazardous materials (HM) to be brought onto the station. Any Hazardous materials planned for use on the station shall be included in the station Hazardous Material Tracking Program maintained by the Safety Department. To assist this effort, the Contractor shall submit a list (including quantities) (see Attachment B-1) of HM to be brought to the station and copies of the corresponding material safety data sheets (MSDS). All hazardous material shall be properly labeled in accordance with OSHA requirements. This list shall be submitted to the Contracting Officer. At project completion, the Contractor shall remove any hazardous material brought onto the station from the site. The Contractor shall account for the quantity of HM brought to the station, the quantity used or expended during the job, and the leftover quantity, which (1) may have additional useful life as a HM and shall be removed by the Contractor, or (2) may be a hazardous waste, which shall then be removed as specified herein.

5.7 Hazardous waste (HW) generated. The Environmental Protection Plan shall list and quantify any HW to be generated during the project

5.8 Storage of hazardous waste. In accordance with station regulations, hazardous waste shall be stored near the point of generation up to a total quantity of one quart of acutely hazardous waste or 55 gallons of hazardous waste. Any volume exceeding these quantities shall be moved to a HW permitted area within 3 days. Prior to generation of HW, contact the Contracting Officer for labeling requirements for storage of hazardous wastes. The Contractor's Environmental Coordinator is responsible to contact Code 106 for waste pick up.

5.9 Hazardous Material Use. With respect to hazardous materials, safety program shall include provisions to deal with hazardous materials, pursuant to the Contract Clause "FAR 52.223-3, Hazardous Material Identification and Material Safety Data" In addition to FAR 52.223-3, the plan shall consist of:

a. An index of hazardous materials to be introduced to the site;

b. Plan for protecting personnel and property during the transport, storage and use of the materials;

c. Procedures for spill response and disposal;

d. Material Safety Data Sheets for materials listed in the index of the plan and not required in the technical section of the specification. Post Material Safety Data Sheets at the worksite where the products will be used. Material Safety Data Sheets meeting the requirements of 29 CFR 1910.1200 shall be submitted for all Title 29 Part 1910.1200 used on this project. The Material Safety Data Sheets shall be submitted to the Shipyard Occupational Safety, Health, and Environment Officer (Code 106), located in Building M-22, 3rd floor at NNSY prior to the hazardous chemical/materials being brought into the Shipyard.

e. Approved labeling system to identify contents an all containers on site.

f. Personnel training plan.

g. Evidence of compliance with 29 CFR 1910.1200 requirements.

h. Each hazardous material shall receive approval prior to bringing onto the job site or prior to any other use in conjunction with this contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material. Any work or storage involving hazardous chemicals or materials shall be done in a manner that will not expose shipyard employees to any unsafe or unhealthful conditions. Adequate protective measures shall be taken to prevent shipyard employees from being exposed to any hazardous condition that could result from the work or storage. Approval by the Contracting Officer of protective measures and storage area is required prior to the start of work.

5.10 Unforeseen Hazardous Material. All known hazardous materials are indicated on the drawings. If additional material that is not indicated on the drawings is encountered that may be dangerous to human health upon disturbance during construction operations, stop that portion of work and notify the Contracting Officer immediately. Intent is to identify materials such as PCB, lead paint, and friable and non-friable asbestos.

Within 14 calendar days the Contractor will determine if the material is hazardous. If the material is not hazardous or poses no danger, the Government will direct the Contractor to

proceed without change. If the material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

5.11 Waste Analysis. The Contractor shall assume responsibility for properly determining waste identification, including responsibility to perform analysis if necessary, so that the proper Department of Transportation (DOT) shipping name can be determined for disposal of wastes. This requirement may be accomplished by the use of contractor acquired laboratory services or by the NNSY laboratory. If the NNSY laboratory performs the sampling the Contractor will provide a Sampling Request form Attachment B-2 to Code 106.323.

5.12 HW Turn In for Disposal. The Contractor Shall:

a. Coordinate with the NNSY Environmental Coordinator prior to and during the generation of HW to determine requirements for collection, packaging, and labeling of the waste in question.

b. Prepare HW for turn in as instructed by the NNSY Environmental Coordinator.

c. Coordinate with the NNSY Environmental Coordinator and ensure HW is transferred to a storage site approved by NNSY Code 106.322 within 3 days of process completion or accumulation in excess of 55 gallons. THIS TRANSFER OF HW WITHIN THE REQUIRED 3 DAY TIME FRAME SHALL OCCUR WITHOUT EXCEPTION.

5.13 Excavation Requirements. Disturbance of soils at work areas may require sampling for disposal and specific requirements for handling of excavated material. Prior to beginning work operations advise Code 106.31 (396-7231), via pre-work package, of any work operations involving soil excavation within the specified areas. Code 106.31 should be notified in all instances where unforeseen or unusual subsurface conditions or materials are encountered, regardless of the location within the Shipyard. When such conditions are encountered the contractor will stop work until approval to proceed is obtained from Code 106. Sampling results will be incorporated into the contractor's Environmental Management Plan.

5.14 Sampling. The following sampling requirements shall apply:

a. Sampling is not required if 100 % of the excavated soils is returned to the excavated area.

b. Sampling is required for generated soil waste and shall be performed as described in the paragraph entitled, "Sampling and Analysis and Evaluation of HW." Sampling results shall be incorporated into the Environmental Management Plan. Delineated soil samples as follows:

1) Small quantities/areas (less than 2 cubic yards) require a single sample.

2) Large quantities/areas (greater than 2 cubic yards) required multiple samples.

5.15 Soil Storage Management. Soil storage areas shall meet the requirements of Attachment B-3 when greater than 2 cubic yards of soil is expected to be stored over a 24 hour period. When indicated by the results of the sampling plan hazardous and non hazardous waste will be kept segregated.

5.16 Soil Disposal. Soil shall be characterized for disposal as follows:

a. Small quantities/areas (less than 2 cubic yards) require a single sample which shall be used to determine contractor/ NNSY disposal.

b. Large quantities/areas (greater than 2 cubic yards) require multiple samples which shall be used to determine the contractor/NNSY disposal as follows:

c. All sample results are non-hazardous, the contractor shall be responsible for containerization and disposal.

d. All sample results are hazardous, the contractor shall be responsible for loading NNSY provided disposal container for disposal by NNSY.

e. Sample results are mixed, (non-hazardous and hazardous), within 21 days prior to completion of work the notify Code 106.31 there will be soil remaining. As soon as practicable the contractor shall obtain a TCLP metals composite sample and provide composite sample results of remaining soil to Code 106.31. Sample results will determine disposal requirements.

5.17 Spill Prevention, Containment, and Clean-up. The Contractor shall contain, clean up, and report all spills on Government property in a manner that complies with applicable federal, state, and local laws and regulations or otherwise stated herein, and the installation spill control plan as specified at no cost to the Government.

5.18 Water Pollution Control.

a. Discharges/flushes to the river, storm drainage system, utility tunnels, sanitary sewerage system, and Dry-dock shall be strictly controlled to maintain compliance with various NNSY operating permits.

b Precautions shall be taken to prevent fuels, oils, paints, thinners, paint chips, dust or related debris from entering the river or storm drain system or dry dock de-watering system.

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HOUSEKEEPING REQUIREMENTS AT NNSY

a. Many safety and fire hazards are caused by cluttering areas, passageways, and spaces with debris and material during work. Work areas shall be cleaned as a minimum, at the end of each shift. All dust or dirt producing operations shall be contained to the space/area of the work by using methods such as engineering controls (e.g., exhaust ventilation), shrink wrap, containments, temporary boundaries, etc. Take prompt corrective actions upon notification by the COR of unacceptable operations/conditions that degrade cleanliness. At the discretion/ direction of the COR, operations may be suspended until proper corrective actions have been accomplished to return the space, area or equipment/component to the level of cleanliness that was originally established. Should the contractor fail to comply, additional contractual remediation efforts will be initiated to effectively rectify the situation in a timely manner.

b. Work areas open to the environment shall be cleaned as a minimum, at the end of each shift to minimize the possibility that spent abrasives, paints, solvents, cleaners, anti-corrosive compounds, paint chips, scrap metal, trash, garbage, petroleum products or other debris will be released to the environment.

c. The contractors shall provide trash receptacles as necessary to maintain good housekeeping in contractors' work areas. These receptacles shall be emptied as necessary to prevent trash from being released to the environment.

d. There are no acceptable amounts of spent abrasives, solvents, cleaners, anti-corrosive compounds, paint chips, scrap metal, trash, garbage, petroleum products or other debris which may be released to the environment.

e. Best management controls shall be established to prevent any amount of spent abrasives, solvents, cleaners, anti-corrosive compounds, paint chips, scrap metal, trash, garbage, petroleum products or other debris from being released to the environment.

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ATTACHMENT B-1
NNSY HAZARDOUS MATERIAL AND EMERGENCY PLANNING

CONTRACTORS HAZARDOUS MATERIAL (HM) AND EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT (EPCRA) REPORTING FORM	
CONTRACTORS NAME:	
POINT OF CONTACT / PHONE NUMBER:	
SUBCONTRACTORS NAME/ PHONE NUMBER:	
DATE OF WORK: BEGIN	END
JOB LOCATION	
CONTRACTING OFFICE (IE., ROICC, PWC, SUPSHIP	
EMERGENCY (24 HR.) POINT OF CONTACT NAME:	PHONE#:
Mail form & Material safety Data Sheets (MSDS) to:	
Code 106.2	
Norfolk Naval Shipyard	Phone 757-396-7719
Portsmouth, VA	Fax 757-396-4826
23709	

Hazardous Materials Name	Manufacturer's Name	Amt. Stored on Base (Gal/Lb)	Storage Location on Base	Usage for Calendar Yr. (gal/Lb)	How will Waste be Disposed of?

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ATTACHMENT B-2

SOIL COVERAGE GUIDANCE

a. The construction of the soil storage area shall be as follows:

b. Plastic sheeting shall be laid on the ground surface prior to any soil collection.

c. Hay bales, or similar structure, will be placed around the perimeter of the storage area.

d. The ground cover plastic will be placed up and over the hay bales at the perimeter and anchored with a heavy object (brick, rock, lumber).

e. The entire pile must be covered with plastic at all times the soil pile is not being actively worked to prevent collection of potentially hazardous rainwater.

f. Holes in any plastic should be repaired, or the entire sheet replaced.

ATTACHMENT B-3
SAMPLING AND MONITORING REQUEST FORM

Name: Code: Phone: FAX: Date:	Code 106.323 USE ONLY Date Received: Date Completed: 106 -

THE FOLLOWING TYPES OF DATA IS PROVIDED TO REQUEST AND SCHEDULE

SAMPLING / MONITORING

Description of Project:

Type Of Material:

Specific Analysis Required:

Point of Contact:

Name	Code	Phone/FAX

	Program Code:	I.D. No.
	PIN No.	

LOCATION: (Be Very Specific) :

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PRIORITY ASSIGNED: 106.323: LAB: Priority (1) = 1 - 5 working days, with overtime Priority (2) = 6 - 15 working days Priority (3) = 16 - 20 working days
COMMENTS:
JOB ORDER NUMBER (All programs shall have a JOB ORDER NUMBER) J.O. # J.O. #
PROGRAM MANAGER: Name Code Phone/Ext.

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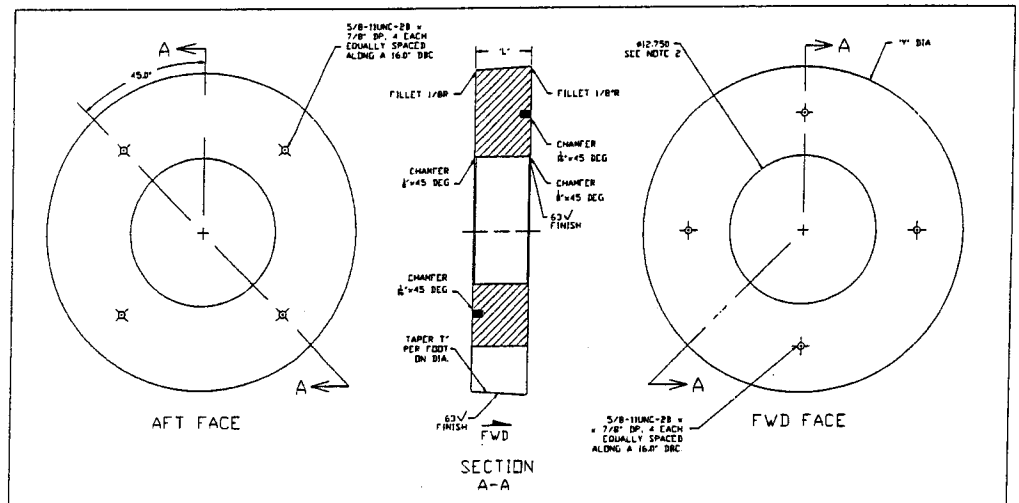

CENTER PLATE NO	SHIP CLASS	FWD FACE DIA "Y" (IN)	LENGTH "L" (IN)	TAPER 1" PER FT ON DIA	APPROX WEIGHT (LBS)
01	CVN-68	27.985	3.000	1.500"	1,944
02	CVN-68	22.077	3.000	1.500"	1,165
03	LHA/LHD	22.438	3.000	1.000"	1,336
04	LHA/LHD	18.979	3.000	1.000"	920
05	SSN-688	22.988	3.000	1.000"	1,408
06	SSN-688	20.342	3.000	1.000"	1,075
07	SSBN-726	26.188	3.000	1.000"	1,866
08	SSBN-726	21.813	3.000	1.000"	1,255

NOTES:
1 PLATES SHALL BE MANUFACTURED FROM STEEL, ABS GR DH36 OR BETTER.
2. CENTER BORE TO BE CONCENTRIC WITH TAPERED SURFACE +/-0.010".
3 TECHNICAL ISSUES: CONTACT NNSY ENGINEERING, CODE 266 (757) 396-3201.
4 PLATES SHALL BE BALANCED IN ACCORDANCE WITH MIL-STD-167 PRIOR TO USE. REMOVE MATERIAL FROM FACES TO CORRECT UNBALANCE.

DIMENSIONAL TOLERANCE			
DECIMAL			
DIMENSION	TOLERANCE		
	1 PL	2 PL	3 PL
UNDER 6 IN.	+/- .1	+/- .02	+/-.005
6 IN. TO 24 IN.	+/- .3	+/- .04	+/-.010
24 IN. & OVER	+/- .5	+/- .06	+/-.015
ANGULAR +/- 0 DEG., 30'			
ALL LINEAR DIMENSIONS IN INCHES.			

PREPARED - CODE 266 F.E. TIFFANY	DATE 11/09/07	NORFOLK NAVAL SHIPYARD
APPROVED - CODE 266 S.R. GOGNIAT	11/13/07	CENTER PLATE MFG PROPELLER VERTICAL BALANCE MACHINE
		SIZE A — DWG NO. (JOB ORDER) 94 060 3M266 — REV. -
		SCALE: NTS — MAT'L: SEE NOTE 1 — SHEET 1 OF 1

DSCR QUALITY ASSURANCE PROVISION (QAP) 175 (OCT 2007)

1. MANDATORY CONTRACTOR INSPECTION SYSTEM:
The inspection system identified in FAR clause 52.246-2, Inspection of Supplies - Fixed Price, applies. This inspection system shall, as a minimum, encompass all tests and examinations specified in paragraph 3 below. Records of all these examinations and tests shall be maintained by the contractor for a period of at least three years after final contract delivery.

2. CALIBRATION REQUIREMENTS:
Contractor shall establish a calibration system in accordance with the edition of NCSL Z540.1 (R2002) dated 1 JAN 1994. NOTE: AQAP-6 (R2002), NATO Measuring and Calibration System Requirement for Industry, July 1976, superseded by ISO 10012-1 shall be implemented for foreign supplies.

3. INSPECTION AND TEST:

a. The contractor shall perform or have performed all inspections and tests required and as governed by drawings, specifications and standard cited elsewhere in this contract to insure total compliance to contract requirements.

b. Visual/Dimensional Inspections: Any departure from a specified requirement shall be classified as a defect. Any defect shall be cause for rejection of the entire shipment quantity.

c. Manufacturing Process Controls and In-Process Inspections: The contractor shall:

(1) Ensure that all manufacturing operations are carried out under controlled conditions which will adequately assure that product characteristics and criteria specified by contract are achieved and maintained in the produced item. Controlled conditions include documented process control and in-process inspection procedures, adequate methods for identifying and handling material, adequate production equipment and working environments. Inspection procedures used by the contractor to determine quality conformance of supplies shall be subject to review/approval by the Government.

(2) As a minimum, perform inspections, examinations and/or tests during manufacturing on those product characteristics which cannot be inspected at a later stage and ensure that process controls are implemented and effective. These examinations and/or tests have to be documented.

d. End Item Tests: Failure of any unit to pass any test shall be cause for rejection of the entire shipment quantity.

e. Examination of Preparation for Delivery: An examination of preservation, packaging, packing and marking shall be performed to determine compliance with contract requirements. Any non-compliance with contractual requirements shall be cause for rejection of the entire shipment quantity.

f. Any defective item discovered by the Government after shipment may be cause for rejection of the entire contract quantity.

4. INSPECTION/ACCEPTANCE:

a. Contract Quality Assurance (CQA): CQA Inspection shall be predicated upon the contractor's successful completion of all inspection, examinations and tests required by the contract and applicable specifications. The DSCR Quality Assurance Office will provide a Quality Assurance Specialist (QAS) to participate in CQA Inspection at the contractor's plant.

b. Acceptance: Final inspection and acceptance at destination shall be predicated upon the contractor's successful completion of all tests required by the contract and applicable specifications. DSCR shall provide a QAS to witness all tests as performed by the contractor and conduct any other tests as deemed necessary within the scope of the contract and applicable specifications.

c. Coordination: The contractor shall coordinate with the Administrative Contracting Officer (ACO) and the Quality Assurance Representative (QAR) at the cognizant Defense Contract Management Agency (DCMA) on all matters concerning the quality requirements of this contract or the monitoring thereof, including the performance of CQA. Inspection and acceptance shall be coordinated through the DCMA and the DSCR Procurement Contracting Office (PCO).

d. Contractor Notification Requirements: The contractor shall notify the ACO or QAR, at the cognizant DCMA and DSCR when the item(s) are ready to present to the Government for inspection and/or acceptance as follows:

(1) Origin: Seven workdays advance notification to the DCMA and DSCR is required for inspection.

(2) Destination: DSCR shall be afforded seven workdays advance notification of the projected date the item(s) will be ready for final inspection and acceptance at destination, and three workdays advance notice if the item(s) will not be ready as projected. NOTE: All federal holidays and weekends are excluded as workdays.

Inspection: Origin Acceptance: Destination